SVM
A Brookbanks Company

Woollham Park, North St Albans

External Lighting Report

26 November 2024

Report Reference: 3289 Woollam Playing Fields External Lighting Report

Revision	Date	Scope of Revision	Prepared by	Issued by	Approved by	Issued On
R0	20/05/2024	Pre-Planning External Lighting Report	DM	DM	MDH	20/05/2024
R1	11/11/2024	For Planning incorporating Planning application at St Albans School for Girls External Floodlighting 5/20/2217	DM	DM	PRR	13/11/2024
R2	26/11/2024	For Planning	DM	DM	MDH	26/11/2024

If the document is marked "draft" it is deemed to be uncontrolled and is issued for comment and further development only.

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1 Introduction

This report has been produced by Danny Mills of SVM Brookbanks for Hallam Land Management Limited (Hallam), and St Albans School and St Albans School Woollam Trust (the applicants) to provide details of a light spill analysis and associated calculations of existing floodlighting of rugby pitches on adjacent land to Old Albanians Rugby Club and proposed artificial pitch for St Albans School for Girls south Woollam Park, north of St Albans (the site). The calculation and report is to understand the effect of the existing floodlighting on the proposed new development. Additionally analysing recent granted planning application reference 5/20/1096 to discharge condition 9 in planning application reference 5/20/2217 for the 'Construction of artificial grass pitch with fencing and floodlighting, associated landscaping works' south of the proposed development for a new proposed sports pitch for St Albans School for Girls (STAG's).

To understand the potential dynamics of light spill, a site survey was conducted at Old Albanians Rugby Club on May 2, 2024, by Danny Mills, alongside a desktop analysis of the approved STAG's planning application. The survey at Old Albanians focused on identifying critical parameters such as the direction, mounting height, and distance of the existing and proposed floodlighting relative to the proposed development boundary. These factors are essential for accurately assessing the influence of the existing floodlighting on the new development area.

The purpose of this report is to provide Hallam Land with precise and actionable insights regarding how adjacent light spill from the existing floodlights could have adverse effects on the proposed residential plots and be identified and mitigated effectively. By understanding these light spill effects, we aim to support the planning and design process of the new development, ensuring that it meets all relevant standards and provides a comfortable living for future residents.

2 External Lighting

2.0 Old Albans Rugby Club

The existing floodlighting at Old Albanians Rugby Club consists of two rugby pitches adjacent to the perimeter of Hallam's proposed new development. These floodlights are mounted on 16m columns, with 3 heads on the 'match pitch' right of the club house and 2 heads on the 'training pitch' left of the club house.

The floodlight used in the design is as follows; Philips OptiVision MVP507 1xMHN-LA2000W with a 5◦ as per planning documentation and visual identification from site survey 02/05/2024.

As per the planning documentation there are restrictions on flood lighting as follows;

Only 3 evenings per week from October to March

Not on after 9pm

Only 1 pitch floodlit at any one time.

The ILP guidance gives notice on obtrusive lighting '***ILP Guidance Note 01/21 'The reduction of obtrusive light'*** the below is a definition and meaning of obtrusive lighting within the document.

'Obtrusive light, *whether it keeps you awake through a bedroom window, impedes your view of the night sky or adversely affects the performance of an adjacent lighting installation, is a form of pollution. It may also be a nuisance in law and can be substantially mitigated without detriment to the requirements of the task.'*

In order to calculate and demonstrate an acceptable level of obtrusive light from the floodlighting installation on the rugby fields, an 'environmental zone' has to be selected to give appropriate illumination requirements.

'E3 – Suburban – Medium district brightness – Well inhabited rural and urban settlements, small town centres of suburban locations.' Is suitable for the rugby club and proposed development north of St Albans town.

The below snippet taken from Guidance Note 01/21 Table 3, E3 pre curfew (before 9pm – as per planning conditions of the floodlighting at Old Albanians) give a recommended luminance of 10-lux pre curfew and 2lux post curfew, light spill diagrams shown in appendix 1.

Recommended Maximum Values of Light Parameters for the Control of Obtrusive Light

Limitation of illumination on surrounding premises

Light intrusion / nuisance

Table 3 (CIE 150 table 2): Maximum values of vertical illuminance on premises

Light technical parameter	Application conditions	Environmental zone				
		E0	E1	E2	E3	E4
Illuminance in the vertical plane (E_v)	Pre-curfew	n/a	2 lx	5 lx	10 lx	25 lx
	Post-curfew	n/a	<0.1 lx*	1 lx	2 lx	5 lx

Snippet taken from ***ILP Guidance Note 01/21 'The reduction of obtrusive light'***

The vertical illuminance (CG1 measuring plane shown in appendix 1) has been measured at 10 meters from the southern boundary adjacent to the training pitch. This has an average of 4.88 lux and a maximum of 9.13 lux, both fall below the recommended 10 lux pre-curfew limit. These values represent likely light levels at neighbouring windows and help assess compliance with obtrusive lighting guidance note 01/21.

SVM Brookbanks conducted a scenario analysis incorporating a proposed 3-metre hedgerow between the Old Albanians rugby pitches and the nearby development to further mitigate nuisance illumination and glare. As outlined in Appendix 2, the hedgerow will help to further reduce glare from the adjacent training pitch and lower vertical illuminance to 3.31lux at the neighbouring proposed properties

2.1 St Albans School for Girls (STAG's)

The approved planning application (reference 5/2021/1096) aims to discharge Condition 9 from the initial planning application (reference 5/2020/2217) for the construction of an artificial grass pitch with fencing, floodlighting, and associated landscaping. The pitch is proposed to be located adjacent to the southern boundary of the intended development. The floodlights are mounted on 15M columns, with two luminaires on each of the four main columns and one luminaire on each corner column.

The specified floodlight for this design is the Siteco A3mx, 2000lm, HITDE, mounted at a 90° angle, providing zero upward light, as indicated in the planning documentation.

Condition 9 for the proposed artificial pitch requires the submission of external lighting isoline contour and light spill information, as shown in Appendix 2.3. The planning documentation provided to discharge Condition 9 includes:

- Siteco lighting technical specifications, received on 13/04/2021.
- Proposed floodlighting plan (drawing no. HLS1475), dated 10/08/2020 and received on 13/04/2021, prepared by Halliday Lighting.
- Untitled floodlight plan, received and dated 19/05/2021, prepared by Halliday Lighting.

Additionally, planning application (reference 5/2022/1710) addresses Condition 6 from planning application (reference 5/2020/2217), which requires a Community Use Agreement, prepared in consultation with Sport England and approved by the Local Planning Authority. The “Community Use Agreement in relation to use of the Artificial Grass Pitch at St Albans Girls School,” prepared for ATLAS Multi Academy Trust, St Albans District Council, and the Hertfordshire Football Association, is available in Appendix 4 (see Schedule 3 for hours of access).

The isoline and light spill information provided in planning permission (reference 5/2021/1096 (Appendix 3)) shows a 5 lux contour line on and extending beyond the boundary of the proposed development. This is expected to be further reduced by the shrubbery provided at boundary.

When reviewing the isoline and contour drawings with ILP Guidance Note 01/21 to assess and demonstrate acceptable levels of obtrusive light from the artificial pitch's floodlighting, an appropriate “environmental zone” must be selected. Zone “E3 – Suburban” (Medium district brightness, well-inhabited rural and urban settlements) is suitable for St Albans Girls’ School and the proposed development north of St Albans town.

As per Guidance Note 01/21 Table 3, the recommended luminance levels for E3 zones are 10 lux pre-curfew (before 9 pm, as per planning conditions) and 2 lux post-curfew.

The hours of access, as specified in Appendix 4 of the Community Use Agreement, restrict community use of the artificial pitch to no later than 9 pm during term time and school holidays, meeting post-curfew requirements. The 5 lux contour line along the boundary falls within the ILP's pre-curfew maximum guideline of 10 lux for environmental zone E3. Consequently, the approved lighting design for the artificial sports pitch is expected to have no adverse impact on the proposed development.

3 Recommendations

We note 3 recommendations as below to be considered.

1- A **suggested 3m hedgerow and/or a 3m fence** would aid the glare from the adjacent ‘training pitch. This would reduce vertical and horizontal illuminance between 3.31lux and 2.91lux. This improvement would enhance the comfort for the prospective residents during the times of the floodlights being on. This can be secured as part of the detailed landscaping scheme for a reserved matters planning application.

2- SVM Brookbanks would also recommend that the **orientation of the homes on the proposed A1 block** of the development are positioned to avoid placing houses, ensuring kitchen/bedroom windows in direct sightlines to the floodlights. This detail can be secured as part of the reserved matters planning application for this phase of development.

3- Should the above mitigation not be provided as part of any future detailed planning application, the **replacement of floodlight heads from MHN-LA/FC metal halide to LED should be considered**, this will improve the directional throw of the light and cut off from the fixture and give an improved efficiency.

4- The approved planning permission for an artificial sports pitch at St Albans School for girls is expected to have no adverse impact on the proposed development.

4 Appendices

4.0 Appendix 1

Perimeter light spill on A1 residential package without proposed hedgerow

Old Albanians Rugby Club

DIALux

Site 1 (Light scene 1)

Calculation objects

Old Albanians Rugby Club

Site 1 (Light scene 1)

Calculation objects

Working planes

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Working plane (Rugby Pitch 1) Perpendicular illuminance Height: 0.750 m, Wall zone: 0.000 m	261 lx	4.71 lx	487 lx	0.018	0.010	WP1
Working plane (Rugby Pitch 2) Perpendicular illuminance Height: 0.750 m, Wall zone: 0.000 m	155 lx	7.51 lx	320 lx	0.048	0.023	WP2
Working plane (Perimeter) Perpendicular illuminance Height: 0.000 m, Wall zone: 0.000 m	1.44 lx	0.14 lx	7.41 lx	0.097	0.019	WP3
Working plane (Perimeter 2) Perpendicular illuminance Height: 0.750 m, Wall zone: 0.000 m	1.68 lx	0.065 lx	4.36 lx	0.039	0.015	WP4

Calculation surfaces

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Calculation surface 1 Perpendicular illuminance Height: 1.500 m	4.62 lx	2.63 lx	8.20 lx	0.57	0.32	CG1
Calculation surface 1 Vertical illuminance Rotation: 90.0°, Height: 3.000 m	4.88 lx	2.58 lx	9.13 lx	0.53	0.28	CG1

Utilisation profile: DIALux presetting (5.1.4 Standard (outdoor transportation area))

Old Albanians Rugby Club

DIALux

Perimeter (Light scene 1)

Calculation objects

Old Albanians Rugby Club

DIALux

Perimeter (Light scene 1)

Working plane (Perimeter)

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Working plane (Perimeter) Perpendicular illuminance Height: 0.000 m, Wall zone: 0.000 m	1.44 lx	0.14 lx	7.41 lx	0.097	0.019	WP3

Utilisation profile: General circulation areas at outdoor workplaces (5.1.1 Walkways exclusively for pedestrians)

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Old Albanians Rugby Club

DIALux

Perimeter (Light scene 1)

Calculation objects

Working planes

Properties	Ē	E_{min}	E_{max}	U_0 (g_1)	g_2	Index
Working plane (Perimeter) Perpendicular illuminance Height: 0.000 m, Wall zone: 0.000 m	1.44 lx	0.14 lx	7.41 lx	0.097	0.019	WP3

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Utilisation profile: General circulation areas at outdoor workplaces (5.1.1 Walkways exclusively for pedestrians)

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4.1 Appendix 2

Perimeter light spill on A1 residential package with proposed hedgerow

Old Albanians Rugby Club

DIALux

Site 1 (Light scene 1)

Calculation objects

Old Albanians Rugby Club

DIALux

Site 1 (Light scene 1)

Calculation objects

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Working plane (Rugby Pitch 2) Perpendicular illuminance Height: 0.750 m, Wall zone: 0.000 m	155 lx	7.52 lx	320 lx	0.049	0.024	WP2
Working plane (Perimeter) Perpendicular illuminance Height: 0.000 m, Wall zone: 0.000 m	0.68 lx	0.002 lx	3.18 lx	0.003	0.001	WP3
Working plane (Perimeter 2) Perpendicular illuminance Height: 0.750 m, Wall zone: 0.000 m	1.68 lx	0.065 lx	4.36 lx	0.039	0.015	WP4

Calculation surfaces

Properties	Ē	E_{min}	E_{max}	U_o (g_1)	g_2	Index
Calculation surface 1 Perpendicular illuminance Height: 1.500 m	2.91 lx	0.99 lx	6.10 lx	0.34	0.16	CG1
Calculation surface 1 Vertical illuminance Rotation: 90.0°, Height: 3.000 m	3.31 lx	0.96 lx	7.42 lx	0.29	0.13	CG1

Utilisation profile: DIALux presetting (5.1.4 Standard (outdoor transportation area))

Old Albanians Rugby Club

DIALux

Perimeter (Light scene 1)

Calculation objects

Old Albanians Rugby Club

DIALux

Perimeter (Light scene 1)

Working plane (Perimeter)

Properties	Ē	E_{min}	E_{max}	U_0 (g_1)	g_2	Index
Working plane (Perimeter) Perpendicular illuminance Height: 0.000 m, Wall zone: 0.000 m	0.68 lx	0.002 lx	3.18 lx	0.003	0.001	WP3

Utilisation profile: General circulation areas at outdoor workplaces (5.1.1 Walkways exclusively for pedestrians)

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Old Albanians Rugby Club

DIALux

Perimeter (Light scene 1)

Calculation objects

Working planes

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Utilisation profile: General circulation areas at outdoor workplaces (5.1.1 Walkways exclusively for pedestrians)

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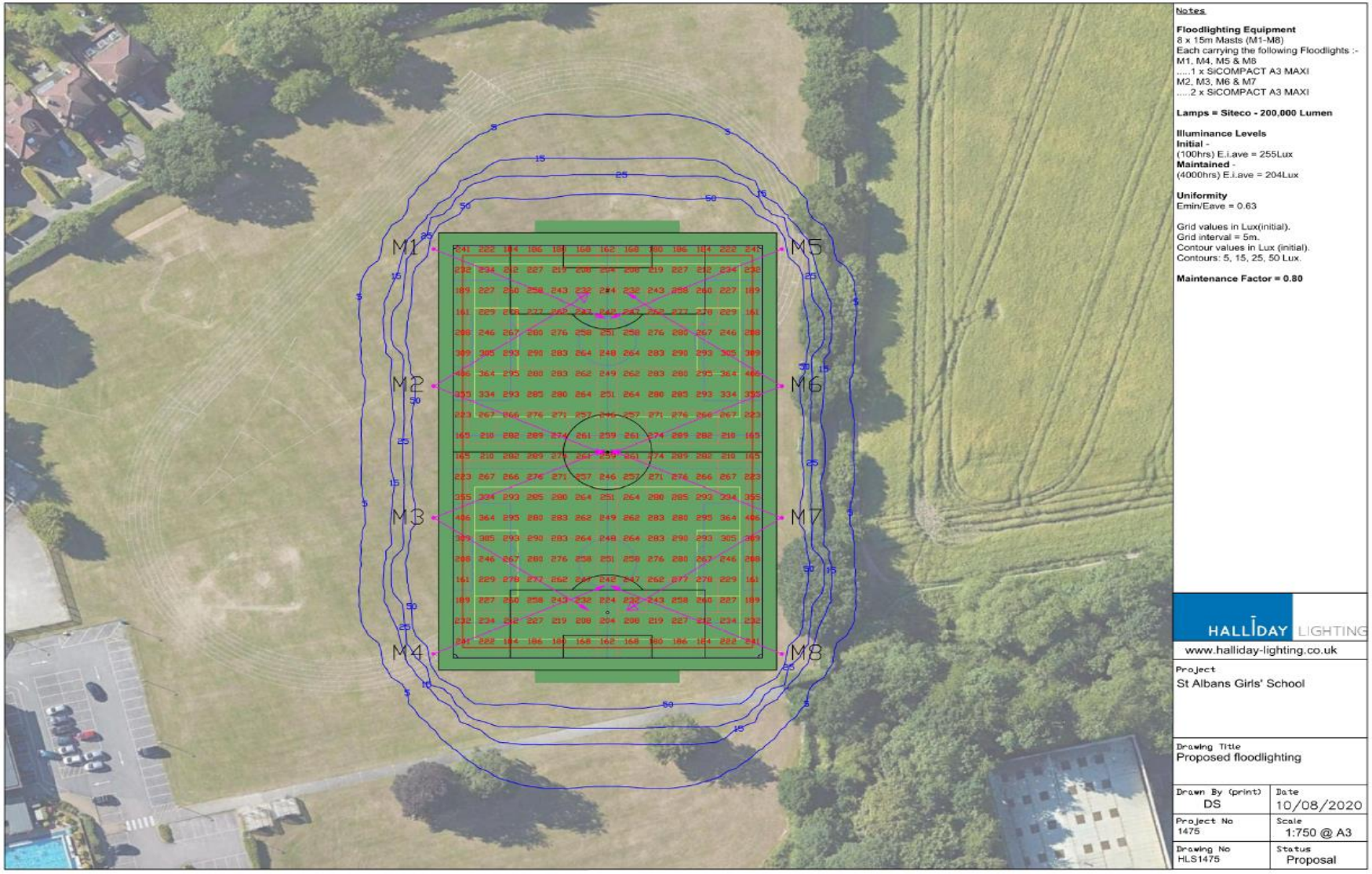
4.2 Appendix 3



4.3 Appendix 4

Schedule 3

Arrangements for Community Use

1. Users

1.1 The Sports Facilities shall be made available for Community Use.

2. **Hours of Access**

No use on bank holidays

Term Time

Community Use	Mon-Fri:	17:00-21:00
	Sat:	09:30-18:00
	Sun:	10:00-16:00

School Holidays

Community Use	Mon-Fri:	08:30-18:00
	Sat:	09:30-18:00
	Sun:	10:00-16:00

5 Photos

Twin Head floodlights on 16m column on training pitch

Three head floodlights on 16m column on match pitch